

Zachary Liu

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EDUCATION

University of California - Berkeley • Berkeley, CA
B.S. Mechanical Engineering

May 2026
GPA 3.75/4.0

EXPERIENCE

Apple - Cupertino, CA

Product Design Engineering Intern - Audio PD

May 2025 - December 2025

- Drove design and managed vendors through multiple build phases for 6 injection molded customer-facing enclosure parts for AirPods as the directly responsible engineer
- Worked with cross functional teams to investigate and test the integration of an improved adhesive into AirPods, aiming to reduce assembly times.
- Presented research findings to a panel of VP and senior director level executives

Tesla - Fremont, CA

Mechanical Design Engineering Intern - Static and Dynamic Sealing

January 2024 - August 2024

- Responsible engineer for 4 dynamic sealing designs for the Gen. 2 Roadster program.
Responsible engineer for 1 dynamic seal design on Model Y and 1 static seal design on Cybertruck.
- Created initial cost-down designs/proposals for Model 3 and Model Y bright trims & seals, leading to ~\$80 cost down per vehicle, est. \$12m/year. Decreased part count by 50% (8 parts per vehicle) by designing for roll forming, co-extrusion, and encapsulation vs. previous separate stamping + extrusion processes.
- Drove design meetings with a supplier to develop a PP/TPV primary seal for Model Y, resulting in 44% weight reduction per part and 2.5kg mass down per vehicle.
- Worked with cross functional teams to identify, root cause, contain, and implement long-term solutions for production line blockers on Cybertruck GA in Austin.

Bimotal, Inc - Berkeley, CA

Mechanical Design Engineering Intern

May 2023 - August 2023

- Designed a test dyno for Bimotal Elevate, enabling performance evaluation and screening out of defective Elevate E-bike drive units prior to customer shipment.
- Performed quality control on Elevate motors prior to drive unit assembly, evaluating incoming part variation and driving supplier improvements.

Bike Builders of Berkeley (BBB) - Berkeley, CA

President

January 2022 - Present

- Led a team of 40 students to design and manufacture custom steel and carbon fiber bicycles using school makerspaces and resources.
- Managed club recruiting and social media presence - increased club membership by 5x and social media following by 10x. Received national (Pinkbike, Singletracks) and international (MTBNews) media attention for the club's 2025 carbon fiber mountain bike.
- Obtained sponsorship from components manufacturers worth over \$6,000/year. Managed sponsor relations and enabled 3 member internships with 2 sponsors.

PROJECTS

CNC Carbon Fiber Tube Winder

Bike Builders of Berkeley - Berkeley, CA

August 2024 - May 2025

- Spearheaded a team of 6 in the design and manufacture of a 2-axis CNC carbon fiber filament winder. Organized 3D printing, carbon fiber manufacturing, and CAD workshops; delegated tasks and conducted design reviews.
- Wrote a custom script to generate GCODE for 3 stepper motors, ensuring uniform wall thickness, consistent winding, and repeatable manufacturing of CF parts.
- Developed a unique layup process using dissolvable 3D printed PVA mandrels, enabling rapid prototyping of non-standard geometry at an extremely low cost.

Head-Aid Crash Detection Sensor

ME100 (Electronics for IoT) - Berkeley, CA

August 2023 - December 2023

- Developed a helmet-mounted prototype capable of detecting a bicycle crash and sending GPS coordinates to an emergency contact upon impact.
- Programmed an ESP 32 microcontroller using MicroPython and integrated accelerometer readings with a GPS/SIM module to achieve functionality.

Custom Bicycle Dropouts

Bike Builders of Berkeley - Berkeley, CA

August 2022 - April 2023

- Designed custom bicycle dropouts to hold rear wheel, brake caliper, and derailleur, compatible with SRAM Universal Derailleur Hanger and flat mount brake standards to ensure reliable shifting and braking performance.
- Manufactured 1 pair of dropouts using a waterjet and manual milling. Machined custom fixtures to secure dropouts while milling.

INVOLVEMENT

Berkeley Engineers and Mentors (BEAM) - Berkeley, CA

Logistics & External Affairs Committees, Student Mentor

January 2023 - Present

- Mentored over 120 K-6 students in 5 classrooms, bringing hands-on STEM education to traditionally underserved communities around the Bay Area.
- Managed the purchasing, organization, and preparation of lesson materials for 600+ students weekly.
- Drove crowdfunding campaigns via MailChimp, raising over \$5,000/year.

SKILLS

Design: CAD (Catia V5/V6, NX, Solidworks, Fusion 360), PLM (Enovia/3DX, Teamcenter), GD&T, DFM (injection molding, CNC, stamping, extrusion), DFA

Software: Python, Micropython, Matlab, JMP